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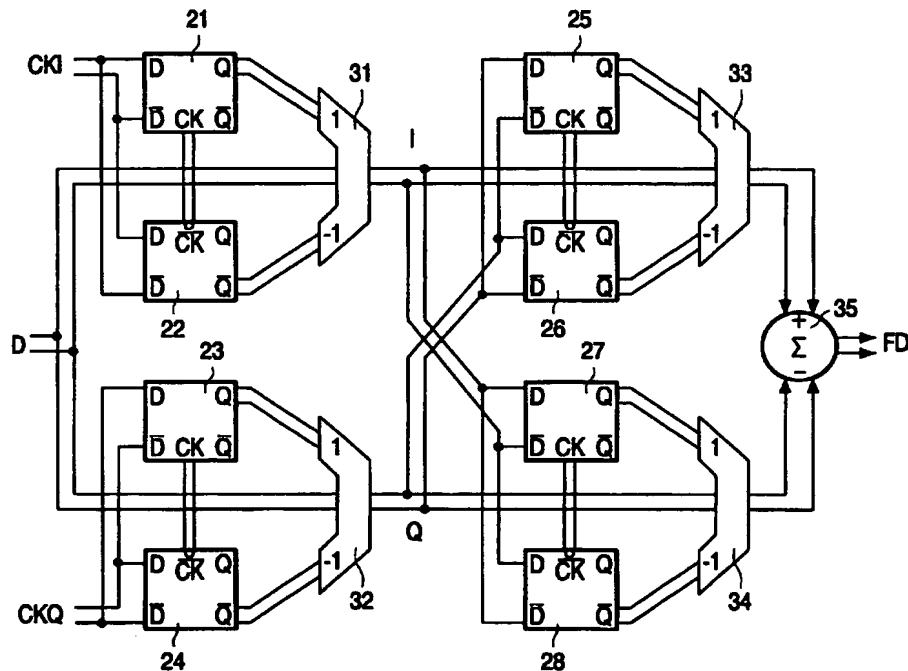
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(54) Title: PLL WITH BALANCED QUADRICORRELATOR



(57) Abstract: A Phase Locked Loop (1) comprising a frequency detector (10) including a balanced quadricorrelator (2), the loop (1) being characterized in that the quadricorrelator (2) comprises double edge clocked bi-stable circuits (21, 22, 23, 24, 25, 26, 27, 28) coupled to multiplexers (31, 32, 33, 34) being controlled by a signal having the same bitrate as the incoming D signal (D).

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	SAVOJ J ET AL: "Design of half-rate clock and data recovery circuits for optical communication systems" PROCEEDINGS OF THE 38TH. ANNUAL DESIGN AUTOMATION CONFERENCE. (DAC). LAS VEGAS, NV, JUNE 18 - 22, 2001, PROCEEDINGS OF THE DESIGN AUTOMATION CONFERENCE, NEW YORK, NY: ACM, US, vol. CONF. 38, 18 June 2001 (2001-06-18), pages 121-126, XP010552368 ISBN: 1-58113-297-2 the whole document --- -/--	1-7

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	<p>CHAN GEUN YOON ET AL: "DIGITAL LOGIC IMPLEMENTATION OF THE QUADRICORRELATORS FOR FREQUENCYDETECTOR" PROCEEDINGS OF THE MIDWEST SYMPOSIUM ON CIRCUITS AND SYSTEMS. LAFAYETTE, AUG. 3 - 5, 1994, NEW YORK, IEEE, US, vol. 2 SYMP. 37, 3 August 1994 (1994-08-03), pages 757-760, XP000531787 ISBN: 0-7803-2429-3 cited in the application the whole document</p>	1-7
Y	<p>US 2002/085657 A1 (BOERSTLER DAVID WILLIAM) 4 July 2002 (2002-07-04) paragraph '0051! - paragraph '0053!; figures 8-12</p>	1-7
A	<p>C.K. KEN YANG: "Timing Recovery" COURSE EE219A LECTURE 17, 'Online! 4 June 2001 (2001-06-04), XP002264983 Retrieved from the Internet: <URL:www.icsl.ucla.edu/{yang/ee219a/ee219a_lect_crc.pdf}> 'retrieved on 2003-12-12! page 9 page 12 -page 13</p>	1-7

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002085657	A1	04-07-2002	NONE